DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
690 Walnut Ave.St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 69.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-006427
Date Inspected: 21-Apr-2009

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

OSM Arrival Time: 700
OSM Departure Time: 1900
Location: Shanghai, China

CWI Name:	Chen Xi			**CWI Present:**	☑ Yes	☐ No	
Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: crossbeams

Summary of Items Observed:

On this day CALTRANS OSM Quality Assurance Inspector (QA) Steve Hall was present during the times noted above for observations relative to the fabrication of the SAS Superstructure being performed by Zhenhua Port Machinery Company (ZPMC) at Changxing Island, in Shanghai, China. QA observed and/or found the following:

OBG bay 9

This QA observed ZPMC qualified welding personnel performed the Gas Metal Arc Weld (GMAW) and Submerged Arc Weld (SAW) 3 Rib PMT# 2 for deck panels DP-509-001 and DP-350-002 on gantry #2. ZPMC welding personnel commenced welding this PMT at 0829 hrs for the above mentioned deck panels. QC and QA visually inspected and accepted 500mm segments of each weld on this PMT panel. ZPMC's QC Ultrasonic Testing (UT) technician ultrasonically inspected and accepted the same 500mm segments of each weld based on the depth of penetration acceptance criteria for closed Rib to deck plate Partial Joint Penetration (PJP) welds specified in the contract documents. Caltrans waived the UT for this PMT today. QA laid-out, match marked and stenciled 5 macro specimens on each PMT rib. QA completed a U-Ribs PMT inspection report for this date and gantry. The report is on file in the Caltrans QA office. The welding parameters and welder ID's for Gantry 2 PMT #2 are as follows:

GMAW
Volts: 30.8 – 31.2 Amps: 355 – 384 Travel speed: 533mmpm

SAW
Volts: 25.1 – 27 Amps: 684 – 696 Travel speed: 516mmpm

Welder ID#'s
Weld joint 1: 059443
Weld joint 2: 059421
Weld joint 3: 059378
Weld joint 4: 062265
Weld joint 5: 059416
Weld joint 6: 059403

This QA examined the macro etch samples cut from the above mentioned PMT panel after ZPMC QC and ABF QA accepted them. The samples appeared to comply with the contract documents.

OBG cross beam CB1

During random in process visual inspection of above mentioned cross beam, this Quality Assurance Inspector (QA) observed numerous Fracture Critical Weld (FCW) tack welds that do not appear to comply with the contract documents. The tack welds in question are joining the FB diaphragms to the SPCM areas of the side and bottom panels. The length of these tack welds measure 15mm to 40mm. AWS D1.5 2002 section 12, table 12.2 specifies tack welds shall be a minimum of 75mm in length. This QA informed the contractors QC CWI identified as Mr. Chen Xi and ABF QA inspector identified as Mr. Kevin Chen of this issue and informed both parties that an incident report would be forth coming.

During random in process visual inspection of above mentioned cross beam, this Quality Assurance Inspector (QA) observed four Fracture Critical Weld (FCW) fillet tack welds that appeared to be cracked. The cracks were verified by Caltrans QA Magnetic particle Testing (MT) technician Mr. Sukanthan. The tack welds in question are joining the floor beam diaphragm to the bottom quarter of the side plates. This QA informed the contractors QC CWI identified as Mr. Chen Xi and ABF QA inspector identified as Mr. Kevin Chen of this issue. Mr. Chen Xi instructed ZPMC workers to remove the tack welds by grinding. He then notified ZPMC QC Magnetic particle Testing (MT) technicians to MT the excavated areas. This QA witnessed the process and it appeared to be in general compliance with the contract documents.

During random in process visual inspection of above mentioned cross beam, this Quality Assurance Inspector (QA) observed that ZPMC has back gouged all the way through two of the Complete Joint Penetration (CJP) splice joints on the SPCM bottom panel. The joints are identified as CB205C-001-013 and 014. Weld 013 has two areas of blow through, each measuring approximately 15mm in length and 6mm wide. Weld 014 has one are of blow through measuring approximately 20mm in length and 10mm wide. (Length is in the direction of the weld). This QA informed the contractors QC CWI identified as Mr. Chen Xi and ABF QA inspector identified as Mr. Kevin Chen of this issue. Mr. Chen Xi informed this QA that ZPMC would submit a Critical Weld Repair (CWR) procedure to the engineer prior to beginning the repairs on the above mentioned issue.

Unless otherwise noted, all work observed on this date appeared to be in general compliance with the applicable contract documents.

WELDING INSPECTION REPORT

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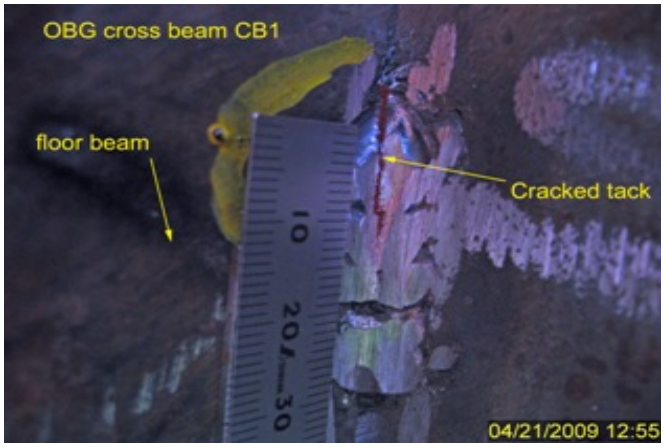

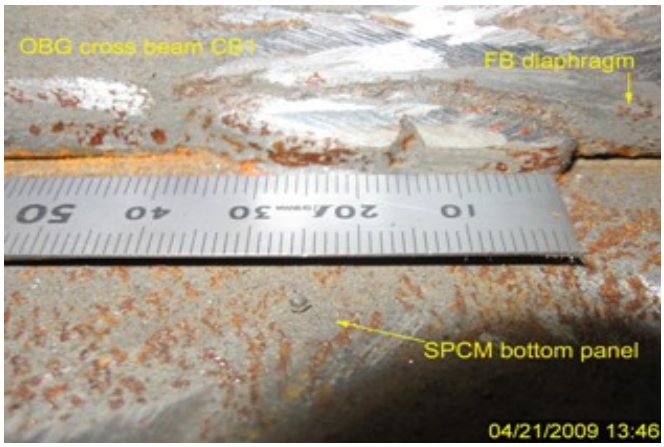

Summary of Conversations:

Only general conversation was held between QA and QC concerning this project.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Eric Tsang (15000422372), who represents the Office of Structural Materials for your project.

Inspected By:	Hall,Steven	Quality Assurance Inspector
Reviewed By:	Prue,Erik	QA Reviewer